

Listing of Claims:

What is claimed, is:

1. (Currently amended) A method comprising employing a vocabulary of color names in assigning a color name to a pixel in a digital representation, including the steps of:
providing said vocabulary of color names with a plurality of color prototypes, each said color prototype having a prototype color name and a corresponding prototype color value;
comparing a pixel color value of said pixel to said prototype color value of each color prototype in the vocabulary, and obtaining a color match value for said each color prototype in the vocabulary;
determining a closest color match value resulting from said step of comparing; ~~and~~
assigning to said pixel a particular prototype color name corresponding to said closest match value;

forming said vocabulary of color names employing the steps of:
obtaining at least one general set of essential color names, each essential color name having a corresponding color value;
whereby each color name includes a hue descriptor, brightness modifier, and saturation modifier; and
selecting a subset of said at least one general set in meeting an application desire for said vocabulary of color names.

wherein the step of obtaining includes starting with a large number of arbitrary color names having corresponding color values and modify said color names through subjective experiments to obtain a general set that models human behavior in color naming.

wherein the step of comparing includes the steps of:

- 1 computing a color distance in a selected color space between the color value of said pixel
- 2 and said prototype color value;
- 3 finding the closest perceptual match to the prototype color value for said color distance;
- 4 computing an estimate value of perceptual dissimilarity between said closest perceptual
- 5 match and color value of said pixel; and
- 6 using said estimate value to modify said color distance, thereby obtaining said color match
- 7 value,
- 8 wherein the step of determining includes finding the prototype color value having the minimum
- 9 color naming distance to the color value of said pixel, and further comprising:
- 10 acquiring a digital representation of a scene; and
- 11 employing said vocabulary in providing a description of a color composition in said scene.
- 12 2. - 40. (Canceled)